148617

SEARCH REQUEST FORM   Scientific and Technical Information Center - EIC2800

Rev. 3/15/2004   This is an experimental format -- Please give suggestions or comments to Jeff Harrison, JEF-4B68, 272-2511.

Date _3/22/05_   Serial # _10/634,915_   Priority Application Date _5/16/03 JP_

Your Name _M. Lewis_   Examiner # _____

AU _2822_   Phone _272-1836_   Room _5A30_

In what format would you like your results? Paper is the default.   **PAPER**   DISK   EMAIL

If submitting more than one search, please prioritize in order of need.   Need before 4/7

The EIC searcher normally will contact you before beginning a prior art search. If you would like to sit with a searcher for an interactive search, please notify one of the searchers.

03-23-05 A09:41 IN

Where have you searched so far on this case?

Circle: USPT   DWPI   EPO Abs   JPO Abs   IBM TDB

Other: _____

What relevant art have you found so far? Please attach pertinent citations or Information Disclosure Statements. _US 20040227211   PGPUB_

_____

What types of <u>references</u> would you like? Please checkmark:

Primary Refs ___✓___   Nonpatent Literature ___   Other _____
Secondary Refs ___✓___   Foreign Patents ___   _____
Teaching Refs ___   _____

What is the topic, such as the **novelty**, motivation, utility, or other specific facets defining the desired **focus** of this search?   Please include the concepts, synonyms, keywords, acronyms, registry numbers, definitions, structures, strategies, and anything else that helps to describe the topic. Please attach a copy of the abstract and pertinent claims.

Claims 1-4 & 9-11

Problem: See pages 1-3
Solution   "   "   "   3 & 4

- H01L 027/082
- Power Semicond. Device for Power control

Additionally, I would like to   AlGaN
see if there are any references   TaO, SiN
that teach what the band gaps are

Staff Use Only	Type of Search	Vendors
Searcher: _HARRISON_	Structure (#)_____	STN _X_
Searcher Phone: _22511_	Bibliographic _α_	Dialog _X_
Searcher Location: STIC-EIC2800, JEF-4B68	Litigation_____	Questel/Orbit_____
Date Searcher Picked Up: _4-7-05_	Fulltext_____	Lexis-Nexis_____
Date Completed: _4-8-05_	Patent Family_____	WWW/Internet _X_
Searcher Prep/Rev Time: _43_	Other_____	Other _____
Online Time: _82_		

```
      FILE 'HCAPLUS' ENTERED AT 10:29:23 ON 08 APR 2005
L1       1538 SEA ABB=ON   PLU=ON   (MAIN OR PRIMARY)(1A)(ELECTRODE OR
                                    CONDUCTOR OR ANODE(4A)CATHODE)
L2       1390 SEA ABB=ON   PLU=ON   (TWO OR SECOND OR ANOTHER OR 2ND OR 2 OR
                                    PAIR###)(W)SEMICOND#######(W)LAYER####
L3      15825 SEA ABB=ON   PLU=ON   (SWITCH###### OR CONTROL###### OR LIMIT####
                                    ### OR RESTRICT#####)(4A)(ELECTRODE OR CONDUCTOR)
L4         10 SEA ABB=ON   PLU=ON   L1 AND L2
L5        122 SEA ABB=ON   PLU=ON   L1 AND L3
L6          4 SEA ABB=ON   PLU=ON   L4 AND L5
L7            SEL PLU=ON   L6 1- RN :        6 TERMS
L8     166862 SEA ABB=ON   PLU=ON   L7
L9          2 SEA ABB=ON   PLU=ON   L6 AND L8
              D ALL HITSTR TOT
L10         2 SEA ABB=ON   PLU=ON   L6 NOT L9
              D ALL TOT
L11         4 SEA ABB=ON   PLU=ON   (L9 OR L10)
L12           SEL PLU=ON   L11 1- IC NCL FTERM ECLA :       19 TERMS
L13      7771 SEA ABB=ON   PLU=ON   L12
L14        57 SEA ABB=ON   PLU=ON   L13 AND L1
L15      7771 SEA ABB=ON   PLU=ON   L12
L16       112 SEA ABB=ON   PLU=ON   L15 AND L2
L17       110 SEA ABB=ON   PLU=ON   L15 AND L3
L18         5 SEA ABB=ON   PLU=ON   L14 AND L16
L19        15 SEA ABB=ON   PLU=ON   L14 AND L17
L20        11 SEA ABB=ON   PLU=ON   L16 AND L17
L21        23 SEA ABB=ON   PLU=ON   (L18 OR L19 OR L20)
L22        19 SEA ABB=ON   PLU=ON   L21 NOT L11
L23         6 SEA ABB=ON   PLU=ON   L22 AND ?LAYERS
L24         7 SEA ABB=ON   PLU=ON   L22 AND (SBD OR SCHOTTKY OR HEMT OR
                                    ?SWITCH? OR ?AVALANCH? OR ?RESISTANCE?)
L25         2 SEA ABB=ON   PLU=ON   L22 AND ?POWER?
L26        16 SEA ABB=ON   PLU=ON   L22 AND ?CONTROL?
L27         0 SEA ABB=ON   PLU=ON   L22 AND ?BANDGAP?
L28         2 SEA ABB=ON   PLU=ON   L22 AND ?BAND?
L29         0 SEA ABB=ON   PLU=ON   L22 AND ENERGY
L30         2 SEA ABB=ON   PLU=ON   L22 AND GAP####
L31         0 SEA ABB=ON   PLU=ON   L22 AND WIDE######
L32         0 SEA ABB=ON   PLU=ON   L22 AND EV
L33         0 SEA ABB=ON   PLU=ON   (L23 OR L24 OR L25) AND (L28 OR L29 OR L30
                                    OR L31 OR L32)
L34         9 SEA ABB=ON   PLU=ON   (L23 OR L24 OR L25) AND L26
L35           SEL PLU=ON   L34 1- RN :       35 TERMS
L36   1425013 SEA ABB=ON   PLU=ON   L35
L37         5 SEA ABB=ON   PLU=ON   L34 AND L36
              D ALL HITSTR TOT
L38         4 SEA ABB=ON   PLU=ON   L34 NOT L37
              D ALL TOT
L39    648803 SEA ABB=ON   PLU=ON   (TWO OR SECOND OR ANOTHER OR 2ND OR 2 OR
                                    PAIR###)(2W)LAYER##### OR LAYERS OR MULTILAYER###### OR
                                    (MULTI OR MULTIPLE OR THREE OR THIRD OR 3 OR 3RD)(2W)LAYER####
                                    ###
L40     11083 SEA ABB=ON   PLU=ON   SEMICOND######(2A)LAYERS
L41       165 SEA ABB=ON   PLU=ON   L1 AND (L2 OR L40 OR L39)
L42        27 SEA ABB=ON   PLU=ON   L41 AND (L3 OR POWER#####)
L43        36 SEA ABB=ON   PLU=ON   L42 OR (L41 AND CONTROL#######)
L44        31 SEA ABB=ON   PLU=ON   L43 NOT (L34 OR L6)

      FILE 'REGISTRY' ENTERED AT 10:43:51 ON 08 APR 2005
L45      5016 SEA ABB=ON   PLU=ON   O.TA/MF OR O TA/ELF OR TANTALUM OXIDE OR
                                    TANTALUM PENTOXIDE
L46       829 SEA ABB=ON   PLU=ON   N.SI/MF OR N SI/ELF
L47       347 SEA ABB=ON   PLU=ON   O.TA/MF OR O TA/ELF
L48       219 SEA ABB=ON   PLU=ON   AL.GA.N/MF OR AL GA N/ELF OR ALUMINUM
                                    GALLIUM NITRIDE
L49       265 SEA ABB=ON   PLU=ON   AL.GA.IN.N/MF OR AL GA IN N/ELF OR
                                    ALUMINUM INDIUM GALLIUM NITRIDE
```

```
L50          287 SEA ABB=ON   PLU=ON   ALUMINUM GALLIUM INDIUM NITRIDE OR L49
L51         3375 SEA ABB=ON   PLU=ON   GA.IN.N/MF OR GA IN N/ELF OR GALLIUM
                 INDIUM ARSENIDE
L52          528 SEA ABB=ON   PLU=ON   GA.N/MF OR GA N/ELF OR GALLIUM NITRIDE

      FILE 'HCAPLUS' ENTERED AT 10:49:22 ON 08 APR 2005
L53            3 SEA ABB=ON   PLU=ON   L44 AND (L46 OR L47 OR L48 OR L49 OR L50
                 OR L51 OR L52)
L54            0 SEA ABB=ON   PLU=ON   L44 AND OVERLAP?
L55            1 SEA ABB=ON   PLU=ON   L44 AND (?BANDGAP? OR BAND GAP####)
L56            4 SEA ABB=ON   PLU=ON   (L53 OR L54 OR L55)
                 D ALL HITSTR TOT
L57        48293 SEA ABB=ON   PLU=ON   (FOUR OR 4 OR 4TH OR FOURTH OR FIFTH OR
                 FIVE OR 5 OR 5TH OR THREE OR THIRD OR 3 OR 3RD)(2W)LAYER######
                 #
L58           27 SEA ABB=ON   PLU=ON   L44 NOT L56
L59            4 SEA ABB=ON   PLU=ON   L57 AND L58
                 D ALL TOT
```

08apr05 10:08:50 User259284 Session D3143.2

File 2:INSPEC 1969-2005/Mar W4
(c) Institution of Electrical Engineers

Set	Items	Description
S1	3549	CI=ALGAN
S2	15254	CI=GAN
S3	4507	CI=(AL SS(S)N SS(S)GA SS)
S4	7193	CI=(N SS(S)GA SS)(S)NE=2
S5	9466	CI=(N SS(S)GA SS)(S)NE=3
S6	6640	CI=(N BIN(S)GA BIN)(S)NE=3
S7	15610	CI=(N BIN(S)GA BIN)(S)NE=2
S8	634	CI=(AL SS(S)N SS(S)GA SS(S)IN SS)
S9	18350	ALINGAN OR ALGAN OR GAN OR INGAN
S10	4536	CI=(N SS(S)GA SS(S)IN SS)
S11	22762	SIN OR SI3N4 OR CI=SIN OR CI=SI3N4
S12	10191	(SI OR SILICON)(W)NITRIDE
S13	4321	TAO OR TA2O5 OR (TA OR TANTALUM)(W)OXIDE? ? OR PENTOXIDE OR CI=TAO OR CI=TA2O5
S14	9823	POWER????(3N)SEMICOND????????
S15	58248	POWER????(3N)CONTROL??????
S16	2231	SEMICOND??????(3N)CONTROL????
S17	201	S14 AND S15 AND S16
S18	908	14AND15
S19	277	14AND16
S20	262	15AND16
S21	555	(ELECTRODES OR (ANODE(4N)CATHODE))/AB AND S1:S13
S22	234	(ELECTRODES OR (ANODE(4N)CATHODE))/AB AND S14:S20
S23	2082	CONTROL????(3N)(ELECTRODE? ? OR CONDUCTOR? ?)
S24	69836	MULTILAYER?
S25	53077	(MULTI OR MULTIPLE OR 2 OR TWO OR SECOND OR ANOTHER OR 2ND-)(2W)LAYER?????????
S26	125	S23 AND S1:S16
S27	2660	S24:S25 AND S1:S16
S28	3678	S17 OR S21 OR S22 OR S26 OR S27
S29	149	S28 AND EV
S30	612	S28 AND WIDE?????????
S31	555	S28 AND (BANDGAP?????? OR BAND()GAP?????? OR ENERG?????(3N-)(WIDE????? OR BAND??????? OR GAP????? OR EV))
S32	44	29AND30AND31
S33	123	S29:S31 AND ELECTRODES
S34	11	S29:S31 AND ANODE(4N)CATHODE
S35	158	S29:S31 AND CONTROL?????????
S36	163	S29:S31 AND POWER?????????
S37	39	S29:S31 AND (SBD OR SBDS OR SCHOTTKY????(3N)(BARRIER????? - OR DIODE???) OR HEMT? ?)
S38	80	S29:S31 AND POWER?????(4N)(CONTROL?????? OR SWITCH??????)
S39	39	S29:S31 AND POWER?????(4N)SEMICOND??????????
S40	640	S24:S25 AND (S26 OR S29:S34)
S41	5	S40 AND CONTROL??????? AND (MAIN OR PRIMARY OR (ANODE(4N)C-ATHODE))
S42	27	(POWER??????? OR HEMT)/TI AND S40
S43	27	S42 NOT S41
S44	0	S43 AND S23
S45	27	S43 AND S24:S25
S46	0	S45 AND ELECTRODES
S47	6	S40 AND ELECTRODES
S48	6	S47 NOT S41
S49	131	MULTILAYERS AND S40
S50	131	S1:S16 AND S49
S51	0	S1:S13 AND S14:S16 AND S50
S52	129	S1:S13 AND S50
S53	2	S14:S16 AND S50
S54	11	S47 OR S41
S55	2	S53 NOT S54

08apr05 10:08:50 User259284 Session D3143.2

File   2:INSPEC 1969-2005/Mar W4
         (c) Institution of Electrical Engineers
(CONTINUED)

S56	52760	SEMICOND??????(3N)(LAYER?????? OR MULTILAYER?????)
S57	23	S52 AND S56
S58	22	S57 NOT (S55 OR S54)
S59	10	S58/2003-2005
S60	12	S58 NOT S59
S61	171174	POWER/TI AND POWER/ID
S62	31050	S61 AND S1:S50
S63	26456	CONTROL??????? AND S62
S64	1817	S63 AND SEMICONDUCT????????
S65	4	S40 AND POWER CONTROL
S66	0	S40 AND MICROCONTROLLERS
S67	10	R1:R9 AND S30
S68	22	S58 OR S59
S69	10	S65:S67
S70	10	S69 NOT S68
S71	40309	R1:R17
S72	44018	R1:R18
S73	20	S40 AND S71:S72
S74	19	S73 NOT (S69 OR S68)
S75	9	S74 AND S1:S13
S76	0	S74 AND DIAMOND
S77	5	THYRISTOR? AND S40
S78	3	S77 NOT (S75 OR S69 OR S68)
S79	13	S1:S13 AND THYRISTOR? AND S14:S17
S80	13	S79 NOT (S77 OR S75 OR S69 OR S68)
S81	5	S80 AND (ONRESISTANCE? OR AVALANCH? OR BREAK?????????)
S82	0	ELECTRODES AND S80